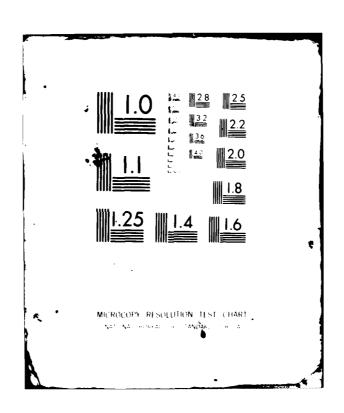
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No. 50

NOVEMBER - DECEMBER 1980

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BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS, No. 50 NOVEMBER - DECEMBER 1980		
		6. PERFORMING ORG. REPORT NUMBER
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Defense Intelligence Agency Directorate for Scientific and Tech	nical	
Intelligence, ATTN: DT-1A	incar	
11. CONTROLLING OFFICE NAME AND ADDRESS		12. REPORT DATE
		November 30, 1981
		13. NUMBER OF PAGES
		118
14. MONITORING AGENCY NAME & ADDRESS(II dilleren	t from Controlling Office)	15. SECURITY CLASS, (of this report)
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- 17. Distribution Statement (of the abstract entered in Block 20, if different from report)
- 18. Supplementary Notes

## 19. KEY WORDS

Solid state Lasers, Liquid Lasers, Gas Lasers, Chemical Lasers, Laser Components, Nonlinear Optics, Spectroscopy of Laser Materials, Ultrashort Pulse Generation, X-Ray Lasers, Gamma Lasers, Laser Theory, Laser Biological Effects, Laser Communications, Laser Beam Propagation, Laser Computer Technology, Holography, Laser Chemical Effects, Laser Parameters, Laser Measurement Applications, Laser-Excited Optical Effects, Laser Spectroscopy, Laser Beam-Target Interaction, Laser Plasma

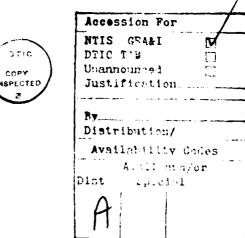
## 20. ABSTRACT

This is the Soviet Laser Bibliography for November-December 1980, and is No. 50 in a continuing series on Soviet Laser developments. The coverage includes basic research on solid state, liquid, gas, and chemical lasers; components; nonlinear optics; spectroscopy of laser materials; ultrashort pulse generation; theoretical aspects of advanced lasers; and general laser theory. Laser applications are listed under biological effects; communications; beam propagation; computer technology; holography; laser-induced chemical reactions; measurement of laser parameters; laser measurement applications; laser-excited optical effects; laser spectroscopy; beam-target interaction; and plasma generation and diagnostics.

## Introduction

This bibliography has been compiled under an interagency agreement as a continuing effort to document current Soviet-bloc developments in the quantum electronics field. The period covered is November-December 1980, and includes all significant laser-related articles received by us in that interval. The bulk of the entries come from the approximately 30 periodicals which are known to publish the most significant findings in Soviet laser technology. Citations from the Russian Reference Journals are also included. Laser items from the popular or semipopular press are generally omitted.

For convenience we have abbreviated frequently cited source names; a source abbreviations list and an author index are included. All sources cited with no parenthetical notation are available at the Library of Congress. A parenthetic!l entry (RZh, KL) indicates the secondary source in which the citation was found as a bibliographic entry or abstract, but for which the original source is not currently available at the Library. The authors' affiliations are indicated by the numbers in parentheses following the authors' names in the text and are listed in the Author Affiliations List. New affiliations are assigned a new number and are added to a cumulative list which includes all affiliations from 1969 to the present. Only those affiliations which appear in this issue are listed in this issue's Author Affiliations List.



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## I. BASIC RESEARCH

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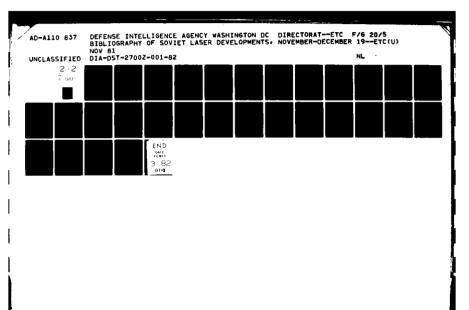
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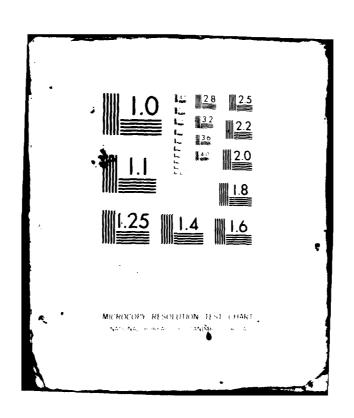
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## IV. SOURCE ABBREVIATIONS

(CIRC Codens)			
APC	(APYCA)	Acta physica et chemica. Szeged	
APP	(ATPLB)	Acta physica polonica	
BWAT	(BWATA)	Biuletyn Wojskowej akademii technicznej J. Dabrowskiego	
CCF	( CKCFA)	Ceskoslovensky casopis pro fysiku	
CJP	(CZYPA)	Czechoslovak Journal of Physics	
DAN B	(DBLRA)	Akademiya nauk Belorusskoy SSR. Doklady	
DAN SSSR	(DANKA)	Akademiya nauk SSR. Doklady	
DAN Ukr	(DUKAB)	Akademiya nauk Ukrayins'koyi RSR. Dopovidi. Seriya A. Fizyko-matematychni ta tekhnichni nauky	
DAN Uz	(DANUA)	Akademiya nauk Uzbekskoy SSR. Doklady	
EOM	(EOBMA)	Elektronnaya obrabotka materialov	
ETP	(EXPPA)	Experimentelle Technik der Physik	
FA10	(IFAOA)	Akademiya nauk SSR. Izvestiya. Fizika atmosfery i okeana	
FGiV	(FGVZA)	Fizika goreniya i vzryva	
FiKhOM	(FKOMA)	Fizika i khimiya obrabotka materialov	
FTP	(FTPPA)	Fizika i tekhnika poluprovodníkov	
FTT	(FTVTA)	Fizika tverdogo tela	
IAN Arm	(IAAFA)	Akademiya nauk Armyanskoy SSR. Izvestiya. Fizika	
I-F2h	(INFZA)	Inzhenerno-fizicheskiy zhurnal	
·IT	(IZTEA)	Izmeritel'naya tekhnika	
IVUZ Fiz	(IVUFA)	Izvestiya vysshikh uchebnykh zavedeniy. Fizika	
IVUZ Priboro	(IVUBA)	Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye	
IVUZ Radioelek	tr (IVUZB)	Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika	
IVUZ Radiofiz	(IVYRA)	Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika	
JTP	(JTPHD)	Journal of Technical Physics [Poland]	

KE	(KVEKA)	Kvantovaya elektronika
KhVE	(KVEKA)	Khimiya vysokikh energiy
KL	(KNLTA)	Knizhnaya letopis'
KLDV	(KLDVA)	Knizhnaya letopis'. Dopolnitel'nyy vypusk
Kristal	(KRISA)	Kristallografiya
KSpF	(KRSFA)	Kratkiye soobshcheniye po fizike
NM	(IVNMA)	Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy
OiS	(OPSPA)	Optika i spektroskopiya
OMP	(OPMPA)	Optiko-mekhanicheskaya promyshlennost'
Opt app	(OPAPB)	Optica applicata [Poland]
Otkr izobr	(OIPOV)	Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki
PMFA	(PMFAA)	Pokroky matematicky, fyziky a astronomie
PSS	(PSSAB) (PSSBB)	Physica Status Solidi (A). Applied Research (B). Basic Research
PTE	(PRTEA)	Pribory i tekhnika eksperimenta
RiE	(RAELA)	Radiotekhnika i elektronika
RZhF	(RZFZA)	Referativnyy zhurnal. Fizika
RZhGeofiz	(GZGFA)	Referativnyy zhurnal. Geofizika
RZhMekh	(RZMKA)	Referativnyy zhurnal. Mekhanika
RZhRadiot	(RZRAB)	Referativnyy zhurnal. Radiotekhnika
Sb1	Sbornik	Elektronnyye i ionnyye protsessy v ionnykh kristallakh, no. 8, Riga, 1980.
Sb2		Fizika, Khimiya i tekhnologiya poluprovodnikovykh geteroperekhodov i sozdannykh na ikh osnove ustroystv. Respublikanskaya konferentsiya, Tartu, 9-10 Dec 1980. Tezisy dokladov. Tartu, 1980.
Sb3		Voprosy atomnoy nauki i tekhniki. Termoyadernyy sintez, no. 1/5, Moskva, 1980.
Sb4		Analiz i inzhenernaya realizatsiya sistem funktsional'noy elektroniki SVCh diapazona. Kiyevskiy politekhnicheskiy institut. Deposit at UkrNIINTI, no. 2290, 2 Sep 1980.

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Sb9	Zondirovaniye fiziko-khimicheskikh parametrov atmosfery s ispol'zovaniyem moshchnykh lazerov. Institut optiki atmosfery SOAN. Tomsk, 1979.
Sb10	Rasprostraneniye elektromagnitnykh voln. Ulan-Ude, 1980.
Sb11	Nauchnyye informatsii, no. 40, Moskva, 1978.
Sb12	Spektral'nyye issledovaniya kosmicheskogo i atmosfernogo izlucheniya. Institut prikladnoy fiziki AN SSSR. Gor'kiy, 1979.
Sb13	Vsesoyuznyy simpozium po lazernomu i akusticheskomu zondirovaniyu atmosfery. 6th. Tezisy dokladov. Part 1. Institut optiki atmosfery SOAN. Tomsk, 1980.
Sb14	Nauchnyye informatsii, no. 44, Riga, Zinatne, 1980.
Sb15	Soveshchaniye po atmosfernoy optike. 2nd. Tezisy dokladov. Part 3. Institut optiki atmosfery SOAN. Tomsk, 1980.
Sb16	Razvitiye, vnedreniye i ekspluatatsiya sredstv svyazi. Vsesoyuznyy nauchno-tekhnicheskiy seminar, Riga, 1980. Tezisy dokladov. Riga, 1980.
Sb17	Golografiya i opticheskaya obrabotka informatsii v geologii. Fiziko-tekhnicheskiy institut AN SSSR. Leningrad, 1980.
Sb18	Spektral'nyye metody obrabotki informatsii v nauchnykh issledovaniyakh. Pushchino, 1980.
Sb19	Fizicheskiye protsessy pri gorenii i vzryve. Moskva, 1980.
Sb20	Sverkhvysokochastotnyye ustroystva izlucheniya i obrabotki radiosignalov. Kazan', 1979.
Sb21	Dinamicheskiye protsessy v gazakh i tverdykh telakh. Leningradskiy GU, 1980.
Sb22	Zeszyty naukowe Akademii gorniczohutniczej, no. 785, 1980.

Sb23		Uchenyye zapiski TsAGI, no. 6, 1980.
Sb24		Acta Universitatis Palackianae Olomucensis. Facultas rerum naturalium, v. 57, Olomouc, 1978.
Sb25		Tekhnika sredstv svyazi. Seriya Tekhnika radioveshchatel'-nogo priyema i akustiki, no. 2, 1979.
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Sb27		Fizika soyedineniy $A^3B^5$ . Vsesoyuznaya konferentsiya. Materialy. Leningrad, 1979.
SCF	(SCEFA)	Studii si cercetari de fizica
TKiT	(TKTEA)	Tekhnika kino i televedeniya
Trl	Trudy	Moskovskiy energeticheskiy institut. Trudy, no. 464, 1980.
Tr2		Moskovskiy institut inzhenerov zheleznodorozhnogo transporta. Trudy, no. 652, 1979.
Tr3		NII radio. Trudy, no. 2, 1980.
Tr4		Leningradskiy elektrotekhnicheskiy institut. Izvestiya, no. 265, 1980.
Tr5		Moskovskiy energeticheskiy institut. Trudy, no. 465, 1980.
Tr6		Moskovskoye vyssheye tekhnicheskoye uchilishche. Trudy, no. 337, 1980.
Tr7		Moskovskiy energeticheskiy institut. Trudy, no. 452, 1980.
TVT	(TVTYA)	Teplofizika vysokikh temperatur
UFN	(UFNAA)	Uspekhi fizicheskikh nauk
UFZh	(UFIZA)	Ukrainskiy fizicheskiy zhurnal
<b>V</b> KU	()	Kiyevskiy universitet. Vestnik. Fizika
VMU	(VMUFA)	Moskovskiy universitet. Vestnik. Fizika, astronomiya
ZhETF	(ZEIFA)	Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhETF P	(ZFPRA)	Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhFKh	(ZFKHA)	Zhurnal fizicheskoy khimii
ZhNiPFiK	(ZNPFA)	Zhurnal nauchnoy i prikladnoy fotografii i kinematografii
ZhNKh	(ZNOKA)	Zhurnal neorganicheskoy khimii

ZhPMTF	(ZPMFA)	Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki
ZhPS	(ZPSBA)	Zhurnal prikladnoy spektroskopii
ZhTF	(ZTEFA)	Zhurnal tekhnicheskoy fiziki
ZhTF P	(PZTFD)	Pis'ma v Zhurnal tekhnicheskoy fiziki
ZhVMMF	(ZVMFA)	Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki
ZL	(ZVDLA)	Zavodskaya laboratoriya

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- 0. Affiliation not given
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- 175. Arctic and Antarctic Scientific Research Institute, Leningrad (Arkticheskiy i antarkticheskiy NII).
- 176. Moscow Geological Prospecting Institut im Ordzhonikidze (Moskovskiy geologorazvedochnyy institut im Ordzhonikidze).
- 179. Moscow Institute of Fine Chemical Technology (Moskovskiy institut tonkoy khimicheskoy tekhnologii).
- 180. Institute of Heat and Mass Exchange, AN BSSR (Institut teplo- i massoobmena AN BSSR).
- 193. Institute of Theoretical and Applied Mechanics, Siberian Branch, AN SSSR, Novosibirsk (Institut teoreticheskoy i prikladnoy mekhaniki SOAN).
- 194. All Union Scientific Research and Design Institute on Drainage of Mineral Deposit Sites, Special Mining Operations, Ore Geology, and Mining Surveying (VNI i proyektno konstruktorskiy institut po osusheniyu mestorozhdeniy poleznykh iskopayemykh, spetsial'nym gornym rabotam, rudnichnoy geologii i marksheyderskom delu).
- 200. Khar'kov, Aviation Institute (Khar'kovskiy aviatsionyy institut).
- 201. Institute for Problems of Information Transmission, AN SSSR, Moscow (Institut problem peredachi informatsii AN SSSR).
- 202. Institute of Electronics, AN UzSSR, Tashkent (Institut elektroniki AN UzSSR).
- 209. Moscow Institute of Precision Mechanics and Computer Technology (Moskovskiy institut tochnoy mekhaniki i vychislitel'noy tekhniki).
- 215. Physico-technical Institute, AN TadzhSSR (Fiziko-tekhnicheskiy institut AN TadzhSSR).
- 220. Institute of Experimental Meteorology (Institut eksperimental'noy meteorologii).
- 231. Scientific Research Institute of Motion Pictures and Photography (NI kinofotoinstitut).
- 240. Odessa State University (Odesskiy GU).
- 247. Scientific Research Institute of Electrophysical Equipment im Yefremov, Leningrad (NII elektrofizicheskoy apparatury im Yefremova).
- 251. Tomsk Institute of Automatic Control Systems and Radioelectronics (Tomskiy institut avtomatizirovannykh sistem upravleniya i radioelektroniki).
- 252. Leningrad Institute of Nuclear Physics, AN SSSR (Leningradskiy institut yadernoy fiziki AN SSSR).
- 276. Institute of Physics of the Earth im Shmidt, AN SSSR (Institut fiziki Zemli im Shmidta AN SSSR).
- 278. Samarkand State University (Samarkandskiy GU).
- 308. Moscow Institute of Railroad Transport Engineers (Moskovskiy institut inzhenerov zheleznodorozhnogo transporta).
- 314. Moscow Oncological Scientific Research Institute im Gertsen (Moskovskiy NI onkologicheskiy institut im Gertsena).
- 327. Novosibirsk Electrotechnical Institute (Novosibirskiy radioelektroniki Institut).
- 334. Scientific Research Institute of Applied Physical Problems at Belorussian State University (NII prikladnykh fizicheskikh problem pri Belorusskom GU).

- 336. Scientific Research Institute of Nuclear Physics, Electronics and Automation at Tomsk Polytechnic Institute (NII yadernoy fiziki, elektroniki i avtomatiki pri Tomskom politekhnicheskom institute).
- 358. Institute of Problems of Strength, AN UkrSSR, Kiev (Institut problem prochnosti AN UkrSSR).
- 389. Yerevan Scientific Research Institute of Mathematics and Mechanics (Yerevanskiy NII matematiki i mekhaniki).
- 395. Scientific Research Institute of Introscopy (NII introskopii).
- 421. Institute of Physics of Metals, Ural Scientific Center, AN SSSR, Sverdlovsk (Institut fiziki metallov Ural'skogo nauchnogo tsentra AN SSSR).
- 424. Voroshilovgrad Mechanical Engineering Institute (Voroshilovgradskiy mashinostroitel'nyy institut).
- 426. Institute of applied Physics, AN SSSR, Gor'kiy (Institut prikladnoy fiziki AN SSSR).
- 445. All Union Scientific Research Institute of the Metrological Service, Moscow (VNII metrologicheskoy sluzhby).
- 465. Kuybyshev Aviation Estitute (Kuybyshevskiy aviatsionnyy institut).
- 484. Buryat Institute of Matural Sciences, Buryat Branch, Siberian Branch, AN SSSR (Buryatskiy bestitut yestestvennykh nauk Buryatskogo filiala SOAN).
- 507. Institute of Solid State and Semiconductor Physics, AN BSSR, Minsk (Institut fiziki tverdogo tela i poluprovodnikov AN BSSR).
- 527. Institute of Catalywis, Siberian Branch, AN SSSR (Institut kataliza SOAN).
- 576. First Moscow Medical Institute im Sechenov (Pervyy Moskovskiy meditsinskiy institut im Sechenova).
- 577. Omsk State Medical Institute im Kalinin (Omskiy gos meditsinskiy institut im Kalinina).
- 580. Astronomical Observatory of the Odessa State University (Astronomicheskaya observatoriya Odesskogo GU).
- 581. Zaporozh'ye Industrial Institute (Zaporozhskiy industrial'nyy institut).
- 583. Astronomical Observatory of the Latvian State University (Astronomicheskaya observatoriya Latviyskogo GU).

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